Mandate M/120

MANDATE TO CEN/CENELEC

CONCERNING THE EXECUTION OF STANDARDISATION WORK

FOR HARMONIZED STANDARDS ON

STRUCTURAL METALLIC PRODUCTS and ancillaries

RELATED TO THE FOLLOWING END USES :

01/33 : TRAFFICKED AREAS
02/33 : FOUNDATIONS AND RETAINING WALLS
03/33 : PILE FOUNDATIONS
04/33 : EXTERNAL WALLS (INCLUDING CLADDING), INTERNAL WALLS AND PARTITIONS
05/33 : FLOORS , GALLERIES, CEILINGS
06/33 : PREFABRICATED SYSTEMS FOR FLOORS AND GALLERIES, STAIRS, RAMPS, RAISED ACCESS FLOORS, BALUSTRADES AND HAND RAILS, INCLUDING EXTERNAL WORKS
07/33 : ROOFS
08/33 : FRAME (INCLUDING CHIMNEYS AND SHAFTS)
13/33 : FLOORS AND STAIR FINISHES
24/33 : SUPPLY OF ELECTRICITY
25/33 : LIGHTING
26/33 : COMMUNICATION
27/33 : TRANSPORT-LIFTS, HOISTS, ESCALATORS, CONVEYORS
30/33 : CIRCULATION FIXTURES
33/33 : STORAGE FIXTURES

ANNEX 1

FIELD OF APPLICATION

STRUCTURAL METALLIC PRODUCTS and ancillaries

TO BE USED IN :

01/33 : TRAFFICKED AREAS
02/33 : FOUNDATIONS AND RETAINING WALLS
03/33 : PILE FOUNDATIONS
04/33 : EXTERNAL WALLS (INCLUDING CLADDING), INTERNAL WALLS AND PARTITIONS
05/33 : FLOORS , GALLERIES, CEILINGS
06/33 : PREFABRICATED SYSTEMS FOR FLOORS AND GALLERIES, STAIRS, RAMPS, RAISED ACCESS FLOORS, BALUSTRADES AND HAND RAILS, INCLUDING EXTERNAL WORKS
07/33 : ROOFS
08/33 : FRAME (INCLUDING CHIMNEYS AND SHAFTS)
13/33 : FLOORS AND STAIR FINISHES
24/33 : SUPPLY OF ELECTRICITY
25/33 : LIGHTING
26/33 : COMMUNICATION

27/33 : TRANSPORT-LIFTS, HOISTS, ESCALATORS, CONVEYORS
30/33 : CIRCULATION FIXTURES
33/33 : STORAGE FIXTURES

FORM	MATERIALS	PRODUCTS FOR CONSIDERATION
plates sections sheet strip tubes bars	Steel Aluminium alloys Metallic (Zn, Al, Zn-Al) coated steel Organic coated steel Stainless steel, Steel alloys Cast steel Cast iron	**Structural metallic sections/profiles :** Hot rolled, cold formed or otherwise produced sections/profiles with various shapes (T, L, H, U, Z, I, channels, angle, hollow, tubes), flat products (plate, sheet, strip), bars, castings, forgings made of various metallic materials, unprotected or protected against corrosion by coating.
kits, elements sections	Steel Aluminium alloys Metallic (Zn, Al, Zn-Al) coated steel Organic coated steel Stainless steel, Steel alloys Cast steel Cast iron	**Structural metallic construction members :** Finished metallic products such as metal framing for suspended ceilings (heavy duty), trusses, girders, columns, stairs, ground piles, bearing piles and sheet piling, cut to size sections designed for certain applications, and rails and sleepers. They can be unprotected or protected against corrosion by coating, welded or not.

FORM	MATERIALS	PRODUCTS FOR CONSIDERATION
wires, bars, formless	Aluminium alloys Steel alloys Stainless steel Steel	**Welding materials**
components	Aluminium alloys Metallic coated steel Organic coated steel Stainless steel Steel	**Structural connectors :** metallic rivets, bolts (nuts and washers) and H. R. bolts (high strength friction grip bolts), studs, screws, railway fasteners

ANNEX 2

TECHNICAL TERMS OF REFERENCE

Note : not all of the characteristics shown in the following tables will be relevant for every product in a particular family or sub-family. CEN/CENELEC should select the subset of characteristics applicable to a particular product from the full set provided.

STRUCTURAL METALLIC PRODUCTS and ancillaries

TO BE USED IN :

01/33 : TRAFFICKED AREAS
02/33 : FOUNDATIONS AND RETAINING WALLS
03/33 : PILE FOUNDATIONS
04/33 : EXTERNAL WALLS (INCLUDING CLADDING), INTERNAL WALLS AND PARTITIONS

05/33 : FLOORS , GALLERIES, CEILINGS
06/33 : PREFABRICATED SYSTEMS FOR FLOORS AND GALLERIES, STAIRS, RAMPS, RAISED ACCESS FLOORS, BALUSTRADES AND HAND RAILS, INCLUDING EXTERNAL WORKS
07/33 : ROOFS
08/33 : FRAME (INCLUDING CHIMNEYS AND SHAFTS)
13/33 : FLOORS AND STAIR FINISHES
24/33 : SUPPLY OF ELECTRICITY
25/33 : LIGHTING
26/33 : COMMUNICATION
27/33 : TRANSPORT-LIFTS, HOISTS, ESCALATORS, CONVEYORS
30/33 : CIRCULATION FIXTURES
33/33 : STORAGE FIXTURES

FAMILY AND SUB-FAMILIES

I) STRUCTURAL METALLIC SECTIONS

Hot rolled, cold formed or otherwise produced sections/profiles with various shapes (T, L, H, U, Z, I, channels, angle, hollow, tubes), flat products (plate, sheet, strip), bars, castings, forgings made of various metallic materials, unprotected or protected against corrosion by coating.

Characteristics to be covered by the harmonized standard will be :

E R	PERFORMANCE CHARACTERISTIC	Durability
1	**-Tolerances on dimension and shape** **-Elongation** **-Ultimate tensile strength** **-Tensile yield strength** **-Impact strength** **-Weldability [chemical composition]** **-Bendability** **-Fatigue strength** **-Fracture toughness/ brittle strength** **-Cold/ warm formability**	**Y** *(against corrosion)*
2	.	.
3	**-Release of cadmium and its compounds** **-Emission of radioactivity**	.
4	.	.
5	.	.
6	.	.

II) STRUCTURAL METALLIC CONSTRUCTION MEMBERS

Finished metallic products such as metal framing for suspended ceilings (heavy duty), trusses, girders, columns, beams, stairs, ground piles, bearing piles and sheet piling, cut to size sections designed for certain applications, and rails and sleepers.
They can be unprotected or protected against corrosion by coating, welded or not.

Characteristics to be covered by the harmonized standard will be :

E R	PERFORMANCE CHARACTERISTIC	Durability
1	**-Impact resistance** **-Tolerances on dimension and shape** **-Weldability [chemical composition]** **-Load bearing capacity** (as relevant to the type of product) **-Fatigue strength** **-Fracture toughness/ brittle strength**	**Y** *(against corrosion)*
2	**-Resistance to fire** **-Reaction to fire** *(for metal framing for suspended ceilings)*	.
3	**-Release of cadmium and its compounds** **-Emission of radioactivity**	.
4	.	.
5	.	.
6	.	.

III) WELDING MATERIALS
Welding materials put on the market for uses in structural metallic works

Characteristics to be covered by the harmonized standard will be :

E R	PERFORMANCE CHARACTERISTIC	Durability
1	-Elongation	Y
	-Tensile strength	*(against corrosion)*
	-Tensile yield strength	
	-Impact strength (resilience)	
	-Weldability [chemical composition]	
	-Tolerances on dimensions	
	-Fatigue strength	
	-Fracture toughness/ brittle strength	
	-Shear strength	
2	.	.
3	-Release of cadmium and its compounds	.
	-Emission of radioactivity	
4	.	.
5	.	.
6	.	.

IV) STRUCTURAL CONNECTORS
Metallic rivets, bolts (nuts and washers) and H. R. bolts (high strength friction grip bolts), studs, screws used in structural metallic works, railways fasteners

Characteristics to be covered by the harmonized standard will be :

E R	PERFORMANCE CHARACTERISTIC	Durability
1	-Tolerances on dimension and shape	Y
	-Elongation	*(against corrosion)*
	-Tensile strength	
	-Tensile yield strength	
	-Fatigue strength	
	-Fracture toughness/ brittle strength	
	-Bonding strength	
	-Friction coefficient	
	-Mechanical strength - stiffness	
	-Weldability [chemical composition]	
	-Impact strength/ hardness	
	-Shear strength	
2	.	.
3	-Release of cadmium and its compounds	.
	-Emission of radioactivity	
4	.	.
5	.	.
6	.	.

COMPREHENSIVE TABLE OF CHARACTERISTICS

STRUCTURAL METALLIC PRODUCTS and ancillaries

E R	Performance characteristics	Structural metallic sections	Structural metallic construction members	Welding materials	Structural connectors	Durability
1	-Load bearing capacity	Y	Y	Y	Y	Y
	-Tolerances on	Y	Y	Y	Y	
	dimension and shape	Y	Y	Y	Y	
	-Elongation	Y	Y	Y	Y	
	-Ultimate tensile	Y	Y	Y	Y	

	strength	**Y**	**Y**	**Y**	**Y**	
	-Tensile yield strength	**Y**		**Y**	**Y**	
	-Fatigue strength	**Y**		**Y**	**Y**	
	-Fracture toughness/ brittle strength	**Y**		**Y**	**Y**	
	-Impact strength	**Y**			**Y**	
	-Weldability [chemical composition]				**Y**	
	-Bonding strength					
	-Friction coefficient					
	-Bendability					
	-Mechanical strength-stiffness					
	-Cold/ warm formability					
	-Shear strength					
2	**-Resistance to fire**	**.**	**Y**	**.**	**.**	**.**
	-Reaction to fire		**Y**			
3	**-Release of cadmium and its compounds**	**Y** **Y**	**Y** **Y**	**Y** **Y**	**Y** **Y**	
	-Emission of radioactivity					
4	**.**	**.**	**.**	**.**	**.**	**.**
5	**.**	**.**	**.**	**.**	**.**	**.**
6	**.**	**.**	**.**	**.**	**.**	**.**

ANNEX 3

ATTESTATION OF CONFORMITY
Product family :

Structural metallic products and ancillaries (1/4)

1. Levels and classes for product performances

1.1 According to article 3.2 of the CPD and Clause 1.2.1 of the IDs, a classification of product performance has been identified as the means of expressing the range of requirement levels of the works in respect of **reaction to fire** and of **resistance to fire**.
Regarding reaction to fire, CEN/CENELEC are requested to follow the Commission Decision 94/611/EC [O.J. L 241 of September 1994] and make reference to the standard(s) to be prepared under Commission mandate to CEN/CENELEC "Horizontal complement to the mandates in respect of reaction to fire" in dealing with reaction to fire in the specific harmonised product standards to be developed under this mandate.
Regarding resistance to fire, CEN/CENELEC are requested to make reference to the standard(s) to be prepared under Commission mandate to CEN/CENELEC "Horizontal complement to the mandates in respect of resistance to fire" in dealing with resistance to fire in the specific harmonised product standards to be developed under this mandate.
1.2 Reaction to fire and resistance to fire are risks for which the need for classification systems has been identified for the time being.
Further needs may be identified on the basis of differences specified in Article 3 (2) of the CPD, which are justified in conformity with Community law (IDs Clause 1.2.1).

Where for such needs it is recognised that a classification of product performance is the means of expressing the range of requirement levels of the works, the Commission will give the appropriate guidance or will request CEN/CENELEC to make the appropriate proposal through a modification to this mandate.

2. Systems of attestation of conformity

For the product(s)and intended use(s) listed below, CEN/CENELEC are requested to specify the following system(s) of attestation of conformity in the relevant harmonised standard(s) :

Product(s)	Intended use(s)	Level(s) or class(es)	Attestation of conformity system(s)
STRUCTURAL METALLIC SECTIONS/PROFILES : Hot rolled, cold formed or otherwise produced sections/profiles with various shapes (T, L, H, U, Z, I, channels, angle, hollow, tubes), flat products (plate, sheet, strip), bars, castings, forgings made of various metallic materials, unprotected or protected against corrosion by coating	to be used in metal structures or in composite metal and concrete structures	.	2+

System 2+ : See CPD Annex III.2.(ii), First possibility, including certification of the factory production control by an approved body on the basis of its continuous surveillance, assessment and approval

3. Conditions to be applied by CEN on the specifications of the attestation of conformity system

The specification for the system should be such that it can be implemented even where performance does not need to be determined for a certain characteristic, because at least one Member State has no legal requirement at all for such characteristic [*see Article 2.1 of the CPD and, where applicable, clause 1.2.3 of the Interpretative Documents*]. In those cases the verification of such a characteristic must not be imposed on the manufacturer if he does not wish to declare the performance of the product in that respect.

Product family :

Structural metallic products and ancillaries (2/4)

1. Levels and classes for product performances

1.1 *[text as for family (1/4)]*
1.2 *[text as for family (1/4)]*

2. Systems of attestation of conformity

For the product(s)and intended use(s) listed below, CEN/CENELEC are requested to specify the following system(s) of attestation of conformity in the relevant harmonised standard(s) :

Product(s)	Intended use(s)	Level(s) or class(es)	Attestation of conformity system

			(s)
STRUCTURAL METALLIC CONSTRUCTION MEMBERS: Finished metallic products such as trusses, girders, columns, stairs, ground piles, bearing piles and sheet piling, cut to size sections designed for certain applications, and rails and sleepers. They can be unprotected or protected against corrosion by coating, welded or not.	for uses in work's frames and foundations	-	2+
STRUCTURAL METALLIC CONSTRUCTION MEMBERS: Finished metal framing for suspended ceilings (heavy duty). They can be unprotected or protected against corrosion by coating, welded or not.	for uses in work's frames	(A, B, C)* (A, B, C)**, D, E, F, A***	1 2+

System 1: See CPD Annex III.2.(i), without audit-testing of samples
System 2+ : See Annex III. section 2.point (ii) of Directive 89/106/EEC, First possibility, including certification of the factory production control by an approved body on the basis of its continuous surveillance, assessment and approval

- Materials for which the reaction to fire performance is susceptible to change during production (In general, those subject to chemical modification, e.g. fire retardants, or where changes of composition may lead to changes in reaction to fire performance)
- * Materials for which the reaction to fire performance is not susceptible to change during the production process
- ** Materials of class A that according to the Decision 96/603 do not require to be tested for reaction to fire.

3. Conditions to be applied by CEN on the specifications of the attestation of conformity system

3.1 The specification for the system should be such that it can be implemented even where performance does not need to be determined for a certain characteristic, because at least one Member State has no legal requirement at all for such characteristic [*see Article 2.1 of the CPD and, where applicable, clause 1.2.3 of the Interpretative Documents*]. In those cases the verification of such a characteristic must not be imposed on the manufacturer if he does not wish to declare the performance of the product in that respect.
3.2 For products under system 1, regarding the initial type testing of the product [see Annex III.1.a) of the CPD], the task for the approved laboratory will be limited to the assessment of the following characteristics:
- **Euroclass characteristics for reaction to fire,** as indicated in the Commission Decision 94/611/EC

Product family :

Structural metallic products and ancillaries (3/4)

1. Levels and classes for product performances

1.1 *[text as for family (1/4)]*
1.2 *[text as for family (1/4)]*

2. Systems of attestation of conformity

For the product(s)and intended use(s) listed below, CEN/CENELEC are requested to specify the following system(s) of attestation of conformity in the relevant harmonised standard(s) :

Product(s)	Intended use(s)	Level(s) or class(es)	Attestation of conformity system(s)
WELDING MATERIALS	for uses in structural metallic works		2+

System 2+ : See CPD Annex III.2.(ii), First possibility, including certification of the factory production control by an approved body on the basis of its continuous surveillance, assessment and approval

3. Conditions to be applied by CEN on the specifications of the attestation of conformity system

The specification for the system should be such that it can be implemented even where performance does not need to be determined for a certain characteristic, because at least one Member State has no legal requirement at all for such characteristic [*see Article 2.1 of the CPD and, where applicable, clause 1.2.3 of the Interpretative Documents*]. In those cases the verification of such a characteristic must not be imposed on the manufacturer if he does not wish to declare the performance of the product in that respect.

Product family :

Structural metallic products and ancillaries (4/4)

1. Levels and classes for product performances

1.1 *[text as for family (1/4)]*
1.2 *[text as for family (1/4)]*

2. Systems of attestation of conformity

For the product(s)and intended use(s) listed below, CEN/CENELEC are requested to specify the following system(s) of attestation of conformity in the relevant harmonised standard(s) :

Product(s)	Intended use(s)	Level(s) or class(es)	Attestation of conformity system(s)
STRUCTURAL CONNECTORS metallic rivets, bolts (nuts and washers) and H. R. bolts (high strength friction grip bolts), studs, screws, railway fasteners	for uses in structural metallic works	.	2+

System 2+ : See CPD Annex III.2.(ii), First possibility, including certification of the factory production control by an approved body on the basis of its continuous surveillance, assessment and approval

3. Conditions to be applied by CEN on the specifications of the attestation of conformity system

The specification for the system should be such that it can be implemented even where performance does not need to be determined for a certain characteristic, because at least one Member State has no legal requirement at all for such characteristic [*see Article 2.1 of the CPD and, where applicable, clause 1.2.3 of the Interpretative Documents*]. In those cases the verification of such a characteristic must not be imposed on the manufacturer if he does not wish to declare the performance of the product in that respect.

ANNEX 4

DANGEROUS SUBSTANCES

European Technical Specifications must be adopted taking into account the necessary legislation on substances classified as dangerous.

This results from the Interpretative Documents, where it is noted in the introduction note to all six Interpretative Documents, that :

"Concerning dangerous substances which are in construction products, classes and/or levels of performance to which technical specifications will refer, shall allow the levels of protection needed by the works to be guaranteed, taking into account the purpose of the works."

In addition, outside the scope of the Directive, writers of technical specifications must take into account legislation which affects material to be used for construction products, and which are regulated for reasons not related to the incorporation into the works of the construction products.

In order to permit technical specification writers to take into account the necessary legislation, a working document was elaborated by the Commission services (doc. CONSTRUCT 95/148 Rev.1 of January 4, 1996). Specification writers should use this document as a guide but must also take account of any other relevant legislation or dangerous substances which the working document does not yet include.

NOTES

(1) O.J. No. C 62, 28.02.1994